

(12) **UK Patent Application** (19) **GB** (11) **2 234 879** (13) **A**
 (43) Date of A publication 13.02.1991

(21) Application No 9013140.0

(22) Date of filing 12.06.1990

(30) Priority data
 (31) 01149210 (32) 12.06.1989 (33) JP

(71) Applicant
Ricoh Company Limited

(Incorporated in Japan)

No 3-6, 1-Chome, Nakamagome, Ota-Ku,
 Tokyo 143, Japan

(72) Inventor
Masaharu Iida

(74) Agent and/or Address for Service
Marks & Clerk
 57-60 Lincoln's Inn Fields, London, WC2A 3LS,
 United Kingdom

(51) INT CL⁵
H04N 1/32 1/00

(52) UK CL (Edition K)
H4F FDB FS33

(56) Documents cited
GB 2229887 A JP 60233962 A US 4631597 A
US 4185282 A

(58) Field of search
 UK CL (Edition K) **B6C CVR CVSA CVSG CVT,**
G4A ADT AKS, H4F FDB, H4K KOD2
 INT CL⁵ **H04N 1/00 1/32**
 Online databases: **WPI, INSPEC**

(54) Facsimile with user-selectable display language

(57) A facsimile (or other image processing) machine having an operating panel (8, fig 1) with a display (8e) for giving user guidance and showing machine status displays information in one of a plurality of languages selected by the user. Information messages to be displayed are stored in ROM and RAM (3, 4) in the plurality of languages available.

FIG. 6A

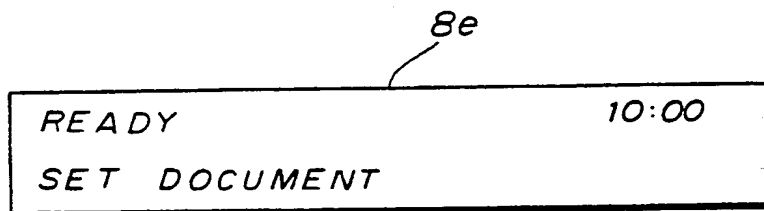
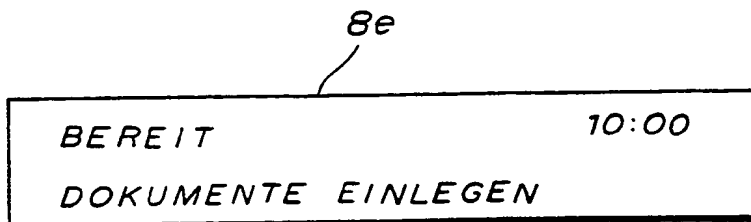


FIG. 6B



GB 2 234 879 A

FIG. 1

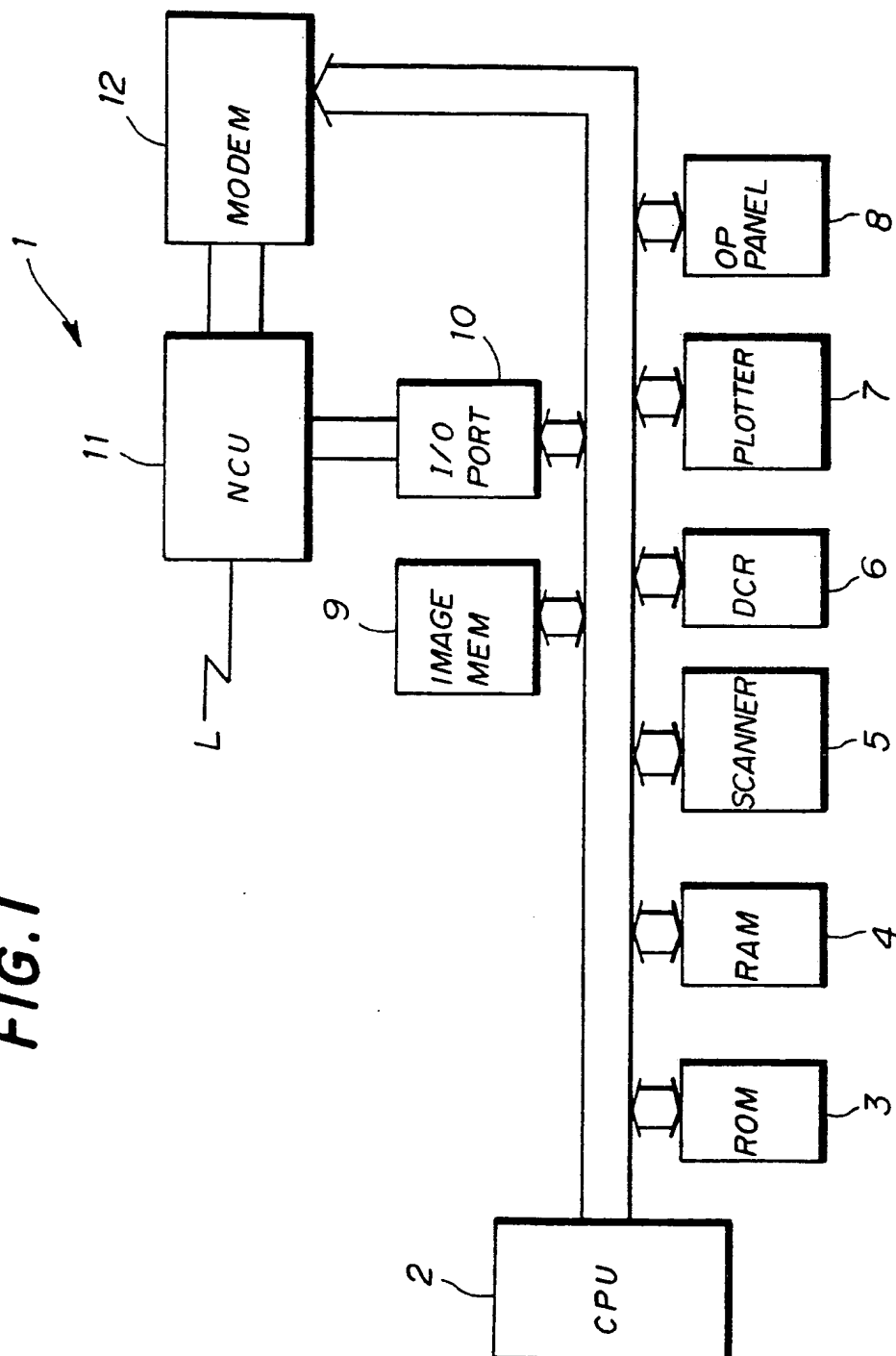


FIG. 2

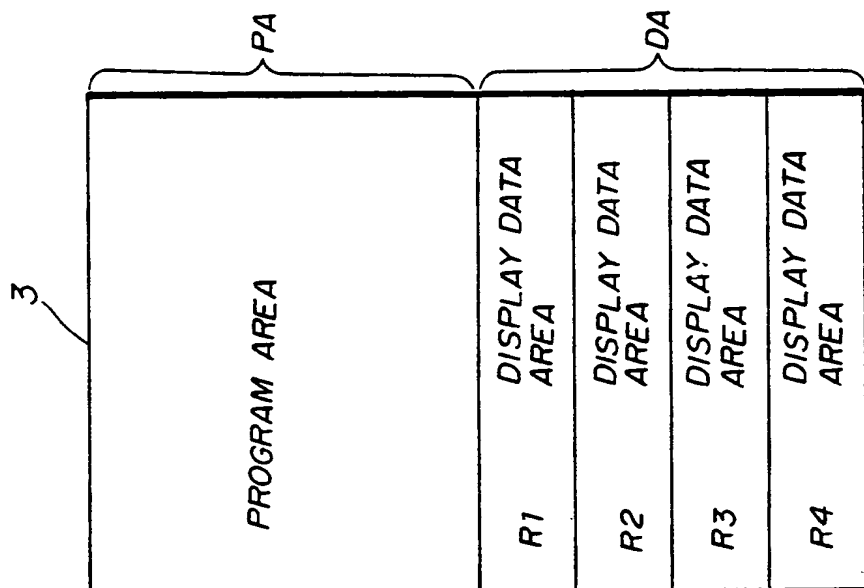


FIG. 3A

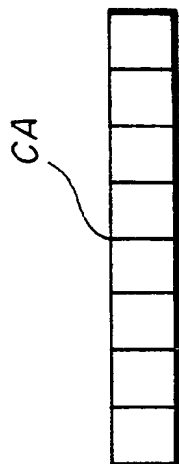


FIG. 3B

0	0	0	0	0	0	0	0	1	R1
0	0	0	0	0	0	0	1	0	R2
0	0	0	0	0	0	1	1		R3
0	0	0	0	0	1	0	0		R4

FIG. 4

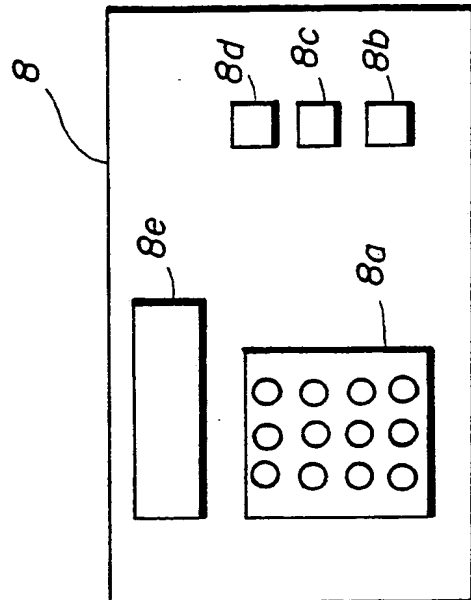
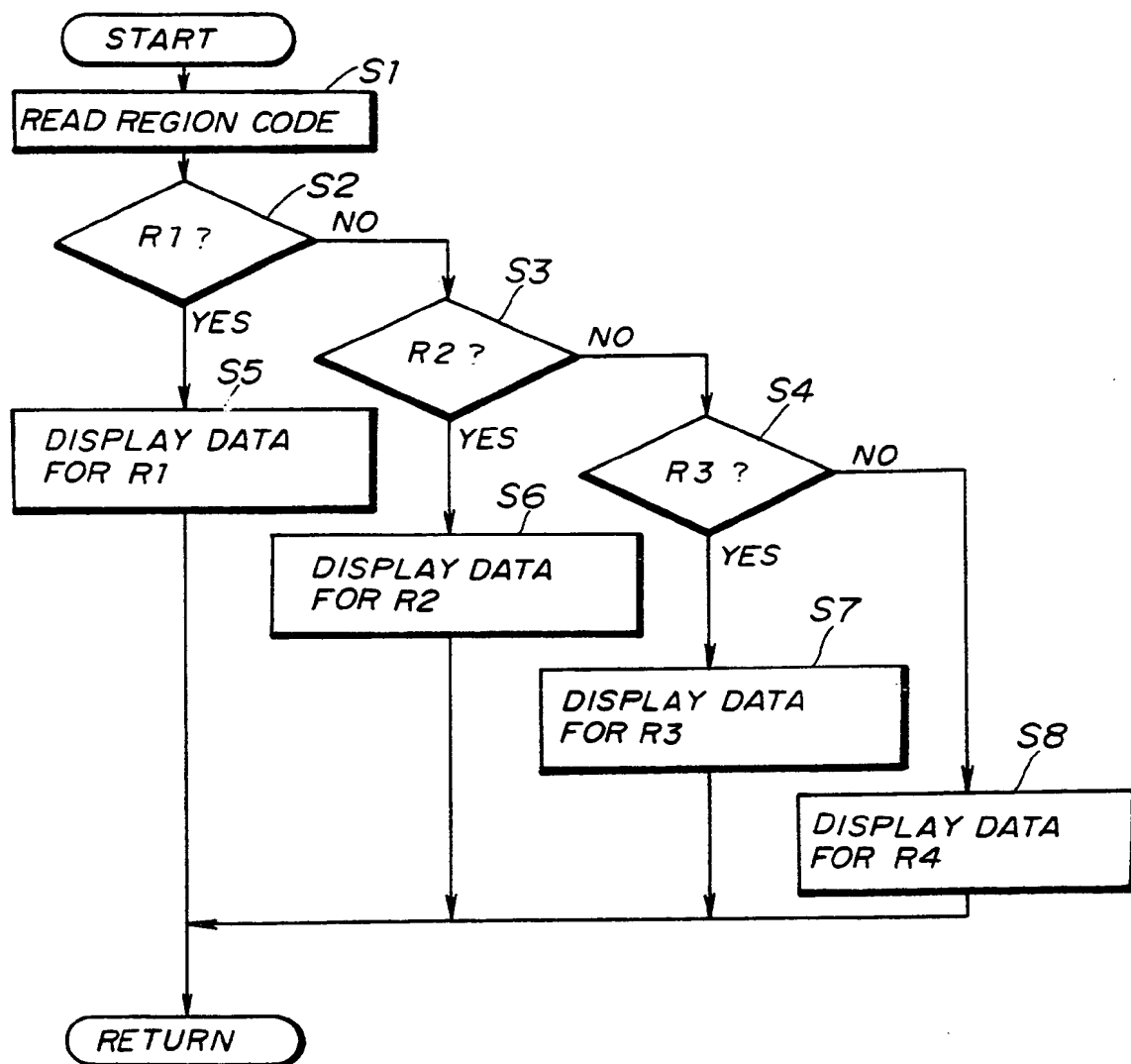


FIG. 5

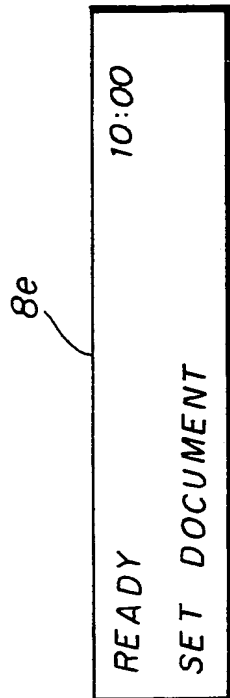


FIG. 6A

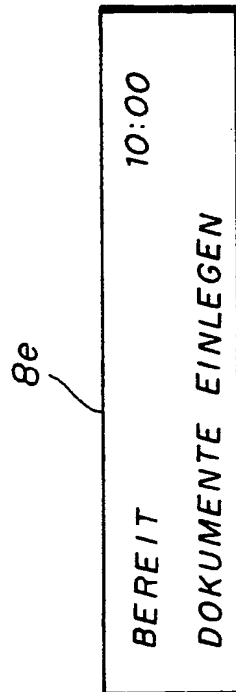
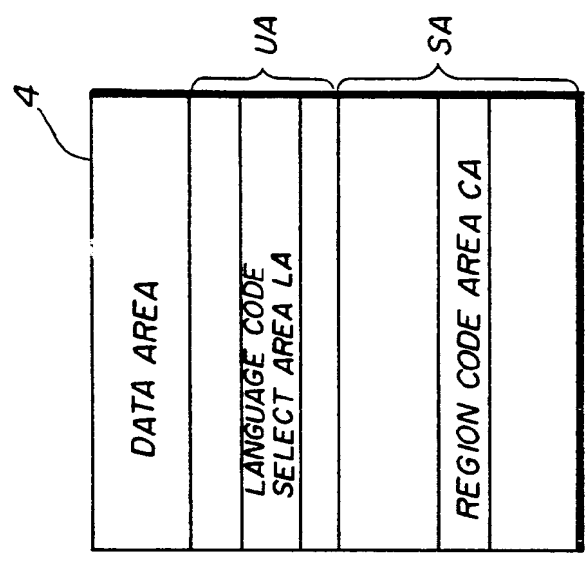


FIG. 6B

FIG. 7



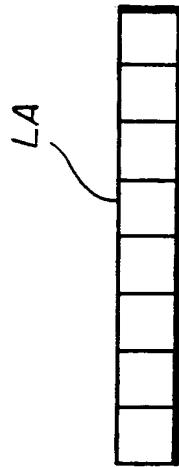


FIG. 8A

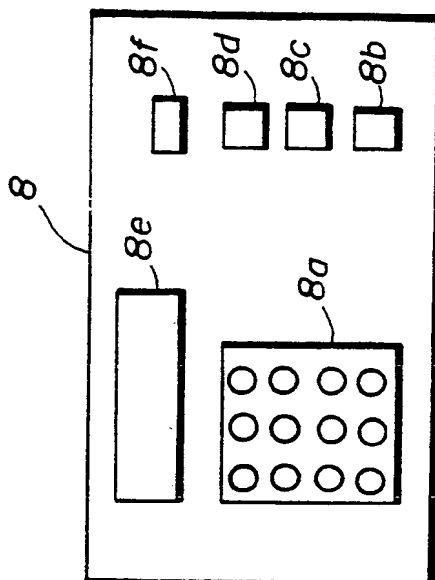
0	0	0	0	0	0	0	0	0	1	LANG1
0	0	0	0	0	0	0	1	0	0	LANG2
0	0	0	0	0	0	1	1	0	0	LANG3
0	0	0	0	0	1	0	0	0	0	LANG4

FIG. 8B

c c

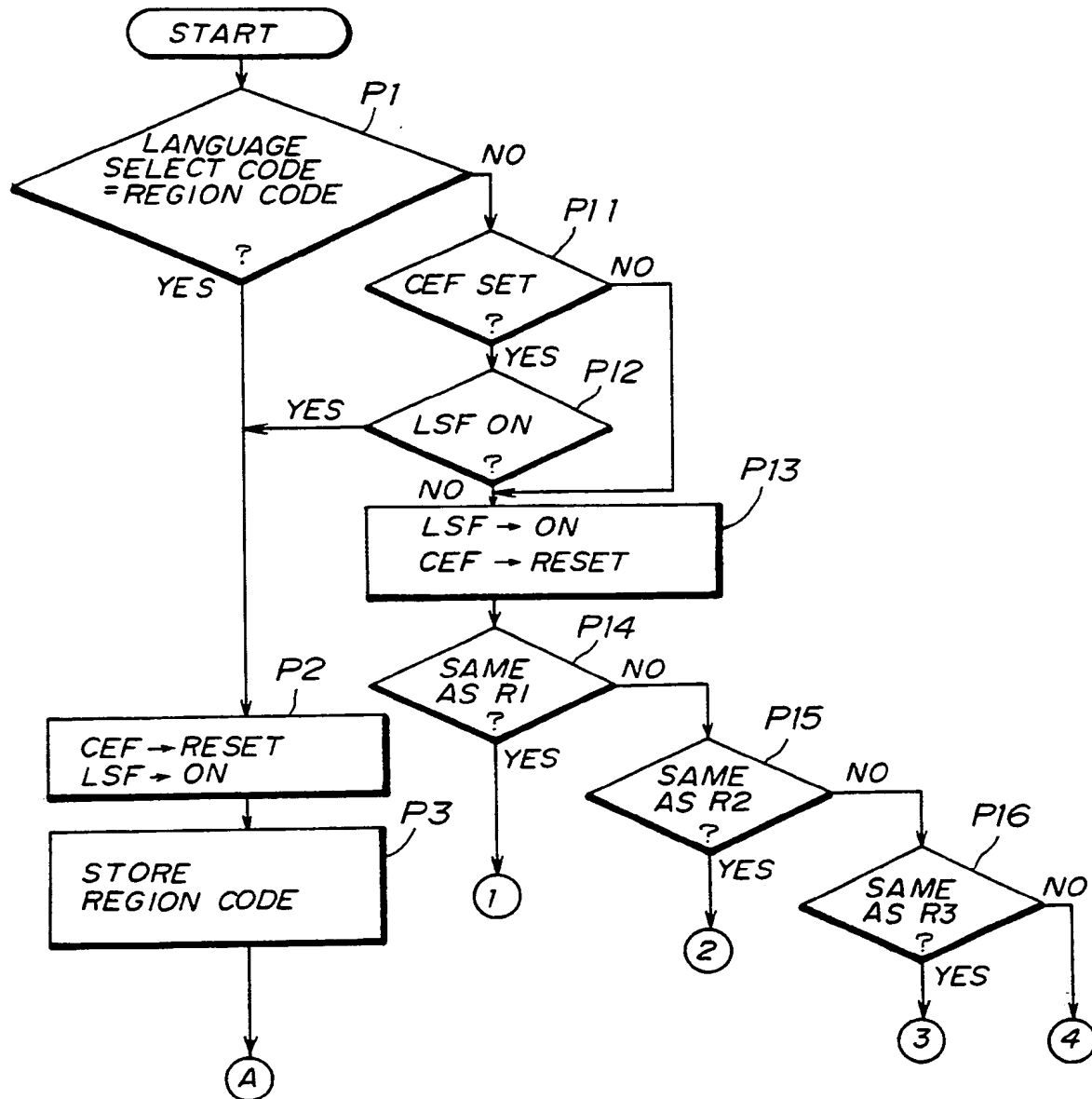
9/12

FIG. 9



10/12

FIG. 10A



11/12

FIG.10B

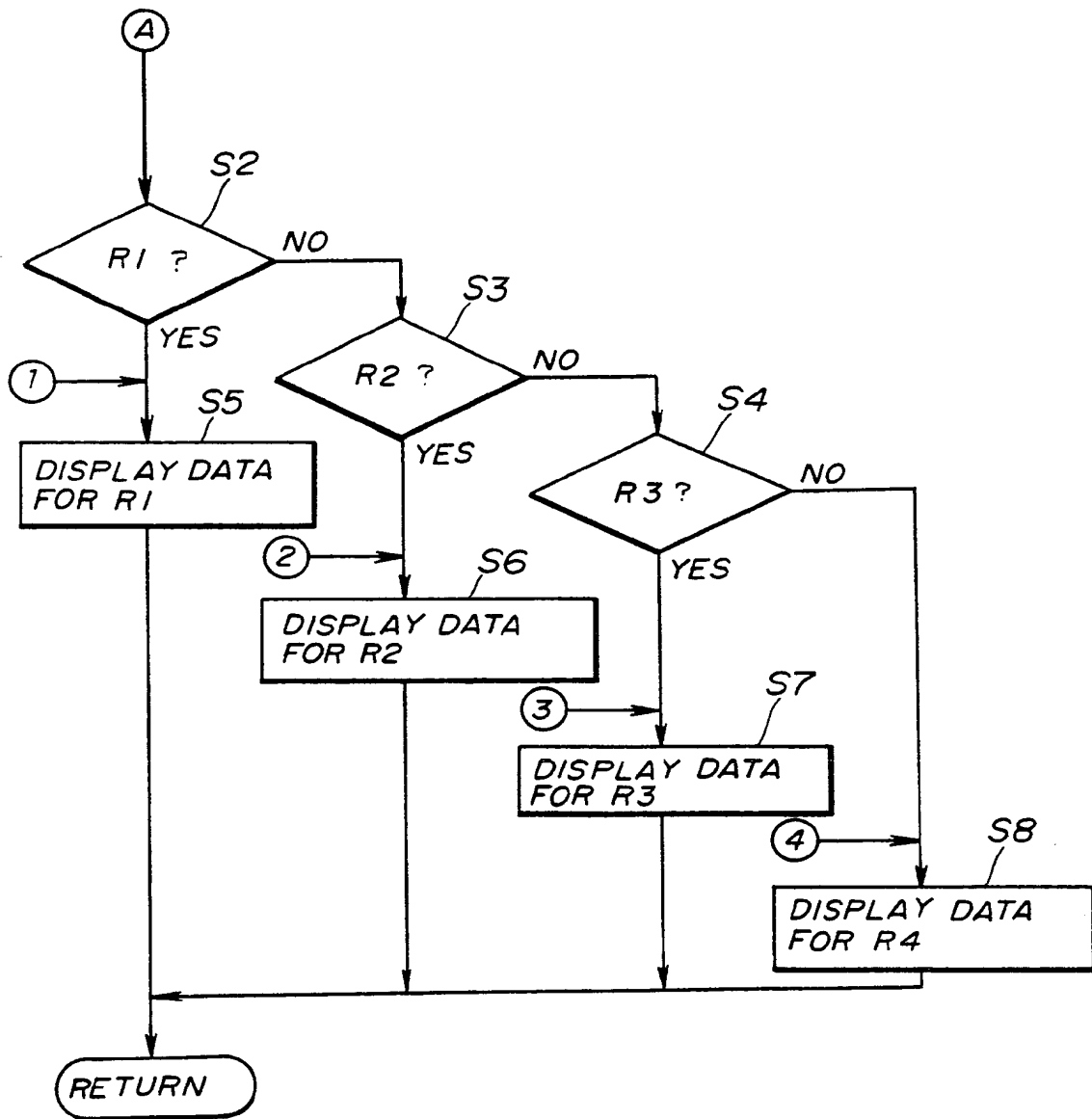
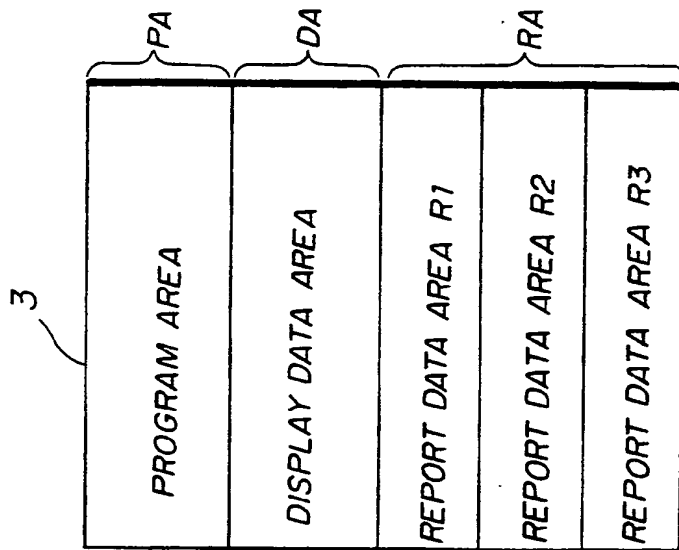


FIG. 11



1.

1

"IMAGE FORMING APPARATUS"

The present invention generally relates to image forming apparatuses, and more particularly to an image forming apparatus with facilitated language processing which is used for display and/or recording of various information.

In facsimile machines, for example, a display or a recording is made to help the user so that a smooth operation is ensured and to indicate the contents of the processing when making a facsimile communication. For example, a guidance for the operator is displayed on a display part. On the other hand, results of communications, information related to the destination and source facsimile machines and the like are recorded on a recording paper. The various information must be displayed or recorded with a language easily understood by the operator. However, the facsimile machines are set up in various countries where different languages are used. For this reason, the language which is used to display or record the various information must be the language used in the region where the facsimile machine is set up.

25

Conventionally, the various information is

1 stored in a memory of the facsimile machine in a
language which is used in the region where the
facsimile is set up. Hence, it is possible to
display or record the various information in the
5 language appropriate for the region where the
facsimile machine is set up.

However, each facsimile machine must be
installed with a memory which stores the various
information in the language which is used in the
10 region where the facsimile machine is set up. For
this reason, the facsimile machines must be produced
for each of the regions where the facsimile machines
are set up. In addition, the same information must
be prepared in many different languages and stored in
15 the memories which are respectively designed for use
in the facsimile machines to be set up in various
regions where different languages are used. As a
result, there are problems in that it is both
troublesome and time consuming to prepare the same
20 information in different languages, the control of
production becomes complex and the facsimile machines
become expensive.

On the other hand, when the various
information is stored in the memory of the facsimile
25 machine in one language, the facsimile machine can

1 can only display or record the various information in
this one language. Therefore, the conventional
facsimile machine is not user-friendly. That is,
when the operator who is used to operating a
5 facsimile machine set up in a first region attempts
to use a facsimile machine set up in a second region
where the language used is different from that used
in the first region, the operator cannot understand
the display or recording output from the facsimile
10 machine unless the operator understands the language
used in the second region and the operator may make
an erroneous operation on the facsimile machine.

The above described problems also occur in
the case of other types of image forming apparatuses
15 such as a copying machine and a printer.

It is a general object of the present
invention to provide a novel and useful image forming
apparatus in which the problems described above are
eliminated.

20 According to one aspect of the present
invention, there is provided an image forming
apparatus comprising input means for inputting a
selection data which selects an arbitrary one of a
plurality of languages, memory means for storing
25 output data which are written in the plurality of

1 languages and the selection data which is input from
said input means, said output data including at least
one of guidance information which provides guidance
for operating the image forming apparatus and control
5 information for reporting a state of the image
forming apparatus, output means including display
means for displaying data and recording means for
recording data on a recording paper, and control
means coupled to said input means, said memory means
10 and said output means for controlling operation
timings of the image forming apparatus, said control
means controlling said output means to output the
output data which is stored in said memory means and
is written in one of the plurality of languages
15 selected by the selection data which is stored in
said memory means using at least one of said display
means and said recording means. According to the
image forming apparatus of the present invention, the
same image forming apparatus can be set up and used
20 in different regions where different languages are
used because the necessary display or recording can
be made in the language which is appropriate for the
region where the image forming apparatus is set up.
As a result, it is possible to produce image forming
25 apparatuses which are user-friendly. Further, the

1 control of production is simple and the image forming
apparatus can be produced at a low cost.

According to another aspect of the present
invention, there is provided an image forming
5 apparatus having first and second modes comprising
input means including means for inputting a first
selection data which selects an arbitrary one of a
plurality of languages and means for inputting a
second selection data which selects an arbitrary one
10 of the plurality of languages different from that
selected by the first selection data, memory means
for storing output data which are written in the
plurality of languages and the first and second
selection data which are input from said input means,
15 said output data including at least one of guidance
information which provides guidance for operating the
image forming apparatus and control information for
reporting a state of the image forming apparatus,
output means including display means for displaying
20 data and recording means for recording data on a
recording paper, and control means coupled to said
input means, said memory means and said output means
for controlling operation timings of an image forming
operation of the image forming apparatus and for
25 automatically setting a mode of the image forming

1 apparatus to the second mode when the second
selection data is input from said input means, said
control means controlling said output means to output
the output data which is stored in said memory means
5 and is written in one of the plurality of languages
selected by the first selection data which is stored
in said memory means using at least one of said
display means and said recording means in the first
mode, said control means controlling said output
10 means to output the output data which is stored in
said memory means and is written in one of the
plurality of languages selected by the second
selection data which is stored in said memory means
using at least one of said display means and said
15 recording means in the second mode and automatically
returning the mode to the first mode after one image
forming operation of the image forming apparatus ends.

Other objects and further features of the
present invention will be apparent from the following
20 detailed description when read in conjunction with
the accompanying drawings.

FIG.1 is a system block diagram showing a
first embodiment of an image forming apparatus
according to the present invention;

25 FIG.2 shows memory areas of a ROM of the

1 first embodiment;

FIGS.3A and 3B respectively show a region code area within a RAM of the first embodiment and a region code which is set in the region code area;

5 FIG.4 shows an embodiment of an operation panel of the first embodiment;

FIG.5 is a flow chart for explaining a language process of a CPU of the first embodiment;

10 FIGS.6A and 6B show displays made on a display part of the operation panel of the first embodiment;

FIG.7 shows memory areas of a RAM of a second embodiment of the image forming apparatus according to the present invention;

15 FIGS.8A and 8B respectively show a language selection code area within the RAM of the second embodiment and a language selection code which is set in the language selection code area;

20 FIG.9 shows an embodiment of an operation panel of the second embodiment;

FIG.10 is a flow chart for explaining a language process of a CPU of the second embodiment; and

25 FIG.11 shows memory areas of a ROM of a modification of the second embodiment of the image

1 forming apparatus according to the present invention.

First, a description will be given of a first embodiment of an image forming apparatus according to the present invention, by referring to
5 FIGS.1 through 6. In this embodiment, the present invention is applied to a facsimile machine.

FIG.1 generally shows the first embodiment. A facsimile machine 1 shown in FIG.1 includes a central processing unit (CPU) 2, a read
10 only memory (ROM) 3, a random access memory (RAM) 4, a scanner unit 5, a data compression and reconstruction (DCR) unit 6, a plotter unit 7, an operation panel 8, an image memory 9, an input/output port 10, a network control unit (NCU) 11 and a modem
15 12 which are connected as shown.

The CPU 2 controls the operation timings of each part of the facsimile machine 1 to enable a facsimile communication.

As shown in FIG.2, the ROM 3 is sectioned
20 into a program area PA and a display data area group DA. Basis programs for carrying out basic operations of the facsimile machine 1 and a language processing program which forms an essential part of this embodiment are stored in the program area PA. The
25 display data area group DA is divided into a

1 plurality of display data areas for each of the
regions where the facsimile machine 1 may be set up.
In this embodiment, four display data areas for four
regions R1 through R4 make up the display data area
5 group DA. Each display data area stores display data
which are written in a language which is used in a
corresponding region Ri, where $i = 1, \dots, 4$ in this
case. The display data stored in each display data
area includes all data which are displayed on a
10 display part of the operation panel 8. For example,
the display data includes guidance information for
guiding the operator when making a facsimile
transmission, guidance information for guiding the
operator when making a facsimile reception and the
15 like. Accordingly, the display data area group DA of
the ROM 3 constitutes a memory means which stores
various information which are written in a plurality
of languages (four in this case) which are used in
the regions where the facsimile machine 1 is set up.
20 The RAM 4 forms a work area, and a region
code area CA shown in FIG.3A is formed in the RAM 4.
Regions codes for the four regions R1 through R4
shown in FIG.3B are set in the region code area CA.
The region code is used as selection information for
25 selecting the display data from the display data area

1 DA of the ROM 3 in conformance with the region Ri
where the facsimile machine 1 is set up. Hence, the
RAM 4 constitutes a selection memory means for
storing the selection information (region codes) for
5 selecting the region (set-up region).

The scanner unit 5 is made up of an image
sensor unit using charged coupled devices (CCDs), for
example. The scanner unit 5 scans a document image
and outputs image data which describes the read
10 document image.

The DCR unit 6 compresses and reconstructs
the image data in conformance with a predetermined
coding/decoding system.

The plotter unit 7 is made up of a thermal
15 plotter unit using thermal elements, for example.
The plotter unit 7 may record information directly on
a thermally sensitive recording paper or indirectly
on a plain recording paper via an ink sheet.
Alternatively, the plotter unit 7 may be made up of a
20 known laser printing unit which uses a laser beam to
make a print.

FIG.4 shows an embodiment of the operation
panel 8. The operation panel 8 includes a ten-key
8a, a start key 8b, a stop key 8c, a copy key 8d, a
25 display part 8e and the like. The start key 9b is

1 used to instruct the start of a facsimile
transmission, the start of a facsimile reception in a
manual reception mode, and the start of a copying
operation. The stop key 8c is used to instruct the
5 stopping of various operations. The copy key 8d is
used to select a copy mode in which a copy print is
made using the scanner unit 5 and the plotter unit
5. The display part 8e displays guidance information
such as the operating instructions for making
10 facsimile transmission and reception and contents of
instructions entered. In other words, the display
part 8e displays the display data within the ROM 3 in
the language which is selected by the region code
area CA of the RAM 4.

15 The image memory 9 has a predetermined
memory capacity for storing image data which are
transmitted and received.

The NCU 11 is connected to a line L and
makes an automatic calling process and an automatic
20 answering process. In addition, the NCU 11 exchanges
facsimile control signals with another facsimile
machine to carry out a facsimile control procedure.

The modem 12 modulates a signal which is to
be transmitted on the line L and demodulates a signal
25 which is received from the line L.

1 In a facsimile transmission mode, the
facsimile machine 1 reads the document which is set
on a document setting part (not shown) by the scanner
unit 5. The image data output from the scanner unit
5 5 is coded in the DCR unit 6 and the coded image data
is modulated in the modem 12. The modulated data is
transmitted on the line L via the NCU 11.

 On the other hand, in a facsimile reception
mode, the facsimile machine 1 demodulates the
10 modulated image data which is received from the line
L in the modem 12. The demodulated image data is
decoded in the DCR unit 6. The decoded image data is
supplied to the plotter unit 7 and recorded on a
recording paper.

15 Next, a description will be given of a
language processing which is carried out in the CPU 2
when displaying or recording various information in
an arbitrary language. FIG.5 is a flow chart showing
the language processing of the CPU 2.

20 The facsimile machine 1 displays various
guidance information on the display part 8e of the
operation panel 8 in a standby mode, a facsimile
transmission mode and a facsimile reception mode.
The guidance information should be displayed in the
25 language the operator can understand.

1 In this embodiment, the display data are
written in languages which may be used in the region
where the facsimile machine 1 is set up, and the
display data in the different languages are prestored
5 in the display data area group DA within the ROM 3.
When the facsimile machine 1 is set up, the
serviceman or the operator sets the region code in
the region code area CA within the RAM 4 by
manipulating appropriate keys of the operation panel
10 8, for example. The display data which are written
in the different languages and independently stored
in the respective display data areas within the ROM 3
are read out depending on the region code which is
set in the region code area CA within the RAM 4, and
15 the display data in the language appropriate for the
region is displayed on the display part 8e.

That is, the display data for the regions
R1 through R4 are stored in the display data area
group DA within the ROM 3 and one of the region codes
20 corresponding to the regions R1 through R4 and shown
in FIG.3B is set as the region code. When displaying
the display data on the display part 8e, the CPU 2 of
the facsimile machine 1 starts the process shown in
FIG.5.

25 A step S1 shown in FIG.5 reads the region

1 code from the region code area CA of the RAM 4. A
step S2 discriminates whether or not the read region
code indicates the region R1. When the
discrimination result in the step S2 is NO, a step S3
5 discriminates whether or not the read region code
indicates the region R2. When the discrimination
result in the step S3 is NO, a step S4 discriminates
whether or not the read region code indicates the
region R3. Hence, the steps S2 through S4 check the
10 region which is indicated by the read region code.

When the discrimination result in the step
S2 is YES, a step S5 reads from the display data area
group DA within the ROM 3 the display data
corresponding to the read region code, that is, the
15 region R1, and displays the read out display data on
the display part 8e. When the discrimination result
in the step S3 is YES, a step S6 reads from the
display data area group DA within the ROM 3 the
display data corresponding to the read region code,
20 that is, the region R2, and displays the read out
display data on the display part 8e. In addition,
when the discrimination result in the step S4 is YES,
a step S7 reads from the display data area group DA
within the ROM 3 the display data corresponding to
25 the read region code, that is, the region R3, and

1 displays the read out display data on the display
part 8e. On the other hand, when the discrimination
result in the step S4 is NO, a step S8 reads from the
display data area group DA within the ROM 3 the
5 display data corresponding to the read region code,
that is, the region R4, and displays the read out
display data on the display part 8e.

For example, when displaying the guidance
information (display data) in the standby mode, a
10 guidance in English is displayed on the display part
8e as shown in FIG.6A when the region code indicates
England. On the other hand, a guidance in German is
displayed on the display part 8e as shown in FIG.6B
when the region code indicates Germany. Accordingly,
15 it is possible to display the display data in the
language appropriate for the region where the
facsimile machine 1 is set up by merely setting the
region code in the region code area CA within the RAM
4. There is no need to produce the facsimile
20 machines 1 exclusively for the different regions. As
a result, the design and production can be controlled
with ease, thereby improving the production
efficiency and reducing the cost of the facsimile
machines 1.

25 Next, a description will be given of a

1 second embodiment of the image forming apparatus
according to the present invention, by referring to
FIGS.7 through 11. In this embodiment, the present
invention is also applied to a facsimile machine
5 which has a structure identical to that of the first
embodiment shown in FIG.1, and a description of the
block system will be omitted. In this embodiment,
the serviceman fixedly sets the language for the
region where the facsimile machine is set up, and the
10 operator can designate an arbitrary language. When
the sequence of facsimile processes are completed in
the language which is designated by the operator, the
language is automatically returned to the language
which is fixedly set by the serviceman. Of course,
15 the operator may fixedly set the language for the
region where the facsimile machine is set up in place
of the serviceman.

In this embodiment, the basic programs of
the facsimile machine 1 and the language processing
20 program are stored in the program area PA of the ROM
3, and the display data written in the languages
appropriate for the regions where the facsimile
machine 1 is set up are stored in the display data
area group DA of the ROM 3 as described in
25 conjunction with FIG.2.

1 On the other hand, the region code area CA
is formed in a serviceman area SA of the RAM 4 and a
language selection code area LA is formed in a user
area UA of the RAM as shown in FIG.7. Similarly as
5 in the case of the first embodiment, when setting up
the facsimile machine 1, the serviceman sets in the
region code area CA the region code which is in
accordance with the region where the facsimile
machine 1 is set up. Normally, the CPU 2 sets in the
10 language selection code area LA a language selection
code the content of which is identical to that of the
region code set in the region code area CA. But when
the operator selects an arbitrary language from the
key of the operation panel 8 when operating the
15 facsimile machine 1, a language selection code
(language instruction information) corresponding to
the selected arbitrary language is set in the
language selection code area LA.

 As shown in FIG.8A, the language selection
20 area LA has 8 bits, similarly to the region code area
CA. In addition, the language selection code which
is set in the language selection code area LA is
given a code which corresponds to one region as shown
in FIG.8B. For example, language selection codes
25 LANG1 through LANG4 respectively correspond to the

1 regions R1 through R4. Accordingly, the language
selection code area LA forms a language instruction
memory which stores the language instruction
information for arbitrarily selecting the output
5 language.

FIG.9 shows an embodiment of the operation
panel 8 of the second embodiment. In FIG.9, those
parts which are the same as those corresponding parts
in FIG.4 are designated by the same reference
10 numerals, and a description thereof will be omitted.
As shown in FIG.9, a language selection key 8f is
provided in addition to the keys 8a through 8d and
the display part 8e. The language selection key 8f
is manipulated when selecting a language selection
15 mode.

For the sake of convenience, it is assumed
that display data for the four regions R1 through R4
are stored in the display data area group DA of the
ROM 3, and one of the four region codes shown in
20 FIG.3B and corresponding to the region where the
facsimile machine 1 is set up is set in the region
code area CA of the RAM 4 by the serviceman. When
the region code is set by the serviceman, the CPU 2
sets in the language selection code area LA a
25 language selection code the content of which is

1 identical to that of the region code set in the
region code area CA.

Next, a description will be given of the
operation of the CPU 2 in this embodiment, by
5 referring to FIG.10. In FIG.10, those steps which
are the same as those corresponding steps in FIG.5
are designated by the same reference numerals, and a
description thereof will be omitted. When displaying
guidance information on the display part 8e of the
10 facsimile machine 1, a step P1 discriminates whether
or not the content of the language selection code
area LA is unchanged. In other words, the step P1
discriminates whether or not the content of the
language selection code area LA is the same as the
15 content of the region code area CA. When the
language selection code and the region code are the
same and the discrimination result in the step P1 is
YES, a step P2 resets a communication end flag CEF
and turns OFF a language switch flag LSF. A step P3
20 reads the content of the region code area CA and
stores the read content into the language selection
code area LA. The communication end flag CEF is
stored in a predetermined region of the RAM 4 and is
set every time one communication ends. In addition,
25 the language switch flag LSF is similarly stored in a

1 predetermined region of the RAM 4. The language
switch flag LSF is set when the language selection
code in the language selection code area LA is
switched to a code different from the region code in
5 the region code area CA.

After the step P3, the process is the same
as in the first embodiment as described in
conjunction with FIG.5. In other words, the steps S2
through S4 checks which one of the regions R1 through
10 R4 is indicated by the region code. In addition, the
steps S5 through S8 read the display data for the
region indicated by the region code and displays the
read display data on the display part 8e.

On the other hand, when the discrimination
15 result in the step P1 is NO, a step P11 discriminates
whether or not the communication end flag CEF is
set. When one communication is ended and the
discrimination result in the step P11 is YES, a step
P12 discriminates whether or not the language switch
20 flag LSF is set, that is, whether or not the language
is switched by the operator. When the discrimination
result in the step P12 is YES, the display is made in
the language selected by the operator and it is
discriminated that the facsimile communication in
25 accordance with the display in the selected language

1 is completed, and the process advances to the step
P2. The step P2 resets the communication end flag
CEF and turns OFF the language switch flag LSF to
return the facsimile machine 1 to the initial state.
5 Accordingly, the region code stored in the region
code area CA is stored in the language selection code
area LA, and the display part 8e displays the display
data which is in the language appropriate for one of
the regions R1 through R4 selected by the region code.
10 On the other hand, when the discrimination
result in the step P11 or P12 is NO, it is
discriminated that the communication process in the
language selected by the operator is not completed or
one communication process is completed but a language
15 selection is made again. In this case, a step P13
turns ON the language switch flag LSF and resets the
communication end flag CEF. Then, a step P14
discriminates whether or not the language selection
code in the language selection code area LA
20 corresponds to the region code of the region R1.
When the discrimination result in the step P14 is NO,
a step P15 discriminates whether or not the language
selection code in the language selection code area LA
corresponds to the region code of the region R2.
25 When the discrimination result in the step P15 is NO,

1 a step P16 discriminates whether or not the language
selection code in the language selection code area LA
corresponds to the region code of the region R3. In
other words, the steps P14 through P16 check which
5 one of region codes of the regions R1 through R4 the
language selection code in the language selection
code area LA corresponds.

The process advances to the step S5 when
the discrimination result in the step P14 is YES.
10 The process advances to the step S6 when the
discrimination result in the step P15 is YES. The
process advances to the step S7 when the
discrimination result in the step P16 is YES. On the
other hand, the process advances to the step S8 when
15 the discrimination result in the step P16 is NO. As
a result, the display data which is written in the
language appropriate for the region which corresponds
to the language selection code in the language
selection code area LA is read from the ROM 3 and
20 displayed on the display part 8e.

Accordingly, even when the operator goes to
a region where the language used is different from
the mother tongue of the operator and the operator
operates the facsimile machine 1, the operator can
25 select the language the operator is able to

1 understand and receive the necessary guidance which
is displayed on the display part 8e in the selected
language. For this reason, the facsimile machine 1
is extremely user-friendly.

5 In addition, when the series of
communication processes are completed in the language
which is selected by the operator, the facsimile
machine 1 is automatically returned to the initial
state so that the display data is thereafter
10 displayed on the display part 8e in the language
which is set by the serviceman and is appropriate for
the region where the facsimile machine 1 is set.
Hence, there is no need to manually return the
facsimile machine 1 to the initial state so that the
15 display data is thereafter displayed on the display
part 8e in the language which is appropriate for the
region where the facsimile machine 1 is set.
Therefore, the facsimile machine 1 is very easy to
operate because the operator can select the desired
20 language in which the guidance is to be displayed on
the display part 8e.

In the described embodiments, the present
invention is applied to the facsimile machine.
However, the present invention is similarly
25 applicable to any types of image forming apparatuses

1 such as a copying machine and a printer.

The information which is output from the facsimile machine 1 in the selected language need not necessarily be displayed on the display part 8e, and
5 may be output in a desired form. In addition, the information which is output in the selected language is not limited to the guidance information which provides guidance for operating the facsimile machine 1. For example, the information which is output in
10 the selected language may include control information for reporting the state of the facsimile machine 1 such as results of transmissions and receptions, information related to the destination and source facsimile machines and the like. Such information
15 may be recorded on the plotter unit 7 instead of being displayed on the display part 8e.

In a modification of the second embodiment, a report data area group RA is provided in the ROM 3 in addition to the program area PA and the display
20 data area group DA as shown in FIG.11. A report such as the results of transmissions and receptions is written in a desired language and stored in a corresponding report data area of the report data area group RA as a report data. The report data in
25 the report data area of the ROM 3 is read and

1 recorded on the recording paper by the plotter unit 7.

In the described embodiments, it is of course possible to use a single memory means and use two independent memory locations thereof as the first
5 and second memory means. That is, a single memory device may be used as the ROM 3 and the RAM 4.

Further, the present invention is not limited to these embodiments, but various variations and modifications may be made without departing from
10 the scope of the present invention.

15

20

25

WHAT WE CLAIM IS:

1

5

1. An image forming apparatus comprising:
input means for inputting a selection data which
selects an arbitrary one of a plurality of languages;
memory means for storing output data which are
10 written in the plurality of languages and the
selection data which is input from said input means,
said output data including at least one of guidance
information which provides guidance for operating the
image forming apparatus and control information for
15 reporting a state of the image forming apparatus;
output means including display means for
displaying data and recording means for recording
data on a recording paper; and
control means coupled to said input means, said
20 memory means and said output means for controlling
operation timings of the image forming apparatus,
said control means controlling said output means
to output the output data which is stored in said
memory means and is written in one of the plurality
25 of languages selected by the selection data which is

1 stored in said memory means using at least one of
said display means and said recording means.

5

2. The image forming apparatus as claimed
in claim 1 wherein said memory means includes a read
only memory for storing the output data and programs
10 for controlling the operation timings of the image
forming apparatus.

15

3. The image forming apparatus as claimed
in claim 1 wherein said memory means includes a
random access memory for storing the selection data
which is input from said input means.

20

4. The image forming apparatus as claimed
25 in claim 1 wherein said output data include display

1 data which are related to the guidance information
and are written in the plurality of languages, and
said control means controls said output means to
display the display data on said display means in one
5 of the plurality of languages selected by the
selection data which is stored in said memory means.

10

5. The image forming apparatus as claimed
in claim 1 wherein said output data include report
data which are related to the control information and
are written in the plurality of languages, and said
15 control means controls said output means to record
the report data on the recording paper by said
recording means in one of the plurality of languages
selected by the selection data which is stored in
said memory means.

20

6. The image forming apparatus as claimed
25 in claim 1 which further comprises means coupled to

1 said control means for carrying out a facsimile
communication, so that the image forming apparatus is
usable as a facsimile machine.

5

7. An image forming apparatus having first
and second modes comprising:

10 input means including means for inputting a
first selection data which selects an arbitrary one
of a plurality of languages and means for inputting a
second selection data which selects an arbitrary one
of the plurality of languages different from that
15 selected by the first selection data;

memory means for storing output data which are
written in the plurality of languages and the first
and second selection data which are input from said
input means, said output data including at least one
20 of guidance information which provides guidance for
operating the image forming apparatus and control
information for reporting a state of the image
forming apparatus;

output means including display means for
25 displaying data and recording means for recording

1 data on a recording paper; and

control means coupled to said input means, said
memory means and said output means for controlling
operation timings of an image forming operation of
5 the image forming apparatus and for automatically
setting a mode of the image forming apparatus to the
second mode when the second selection data is input
from said input means,

said control means controlling said output means
10 to output the output data which is stored in said
memory means and is written in one of the plurality
of languages selected by the first selection data
which is stored in said memory means using at least
one of said display means and said recording means in
15 the first mode,

said control means controlling said output means
to output the output data which is stored in said
memory means and is written in one of the plurality
of languages selected by the second selection data
20 which is stored in said memory means using at least
one of said display means and said recording means in
the second mode and automatically returning the mode
to the first mode after one image forming operation
of the image forming apparatus ends.

25

1 8. The image forming apparatus as claimed
in claim 7 wherein said memory means includes a read
only memory for storing the output data and programs
for controlling the operation timings of the image
5 forming apparatus.

10 9. The image forming apparatus as claimed
in claim 7 wherein said memory means includes a
random access memory for storing the first and second
selection data which are input from said input means.

15

 10. The image forming apparatus as claimed
in claim 7 wherein said output data include display
20 data which are related to the guidance information
and are written in the plurality of languages, and
said control means controls said output means to
display the display data on said display means in one
of the plurality of languages selected by the first
25 selection data which is stored in said memory means

1 in the first mode and selected by the second
selection data which is stored in said memory means
in the second mode.

5

11. The image forming apparatus as claimed
in claim 7 wherein said output data include report
10 data which are related to the control information and
are written in the plurality of languages, and said
control means controls said output means to record
the report data on the recording paper by said
recording means in one of the plurality of languages
15 selected by the first selection data which is stored
in said memory means in the first mode and selected
by the second selection data which is stored in said
memory means in the second mode.

20

12. The image forming apparatus as claimed
in claim 7 which further comprises means coupled to
25 said control means for carrying out a facsimile

1 communication, so that the image forming apparatus is
usable as a facsimile machine.

5

13. An image forming apparatus
substantially as hereinbefore described with
reference to and as illustrated in the accompanying
10 drawings.

15

20

25

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☒ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.

THIS PAGE BLANK (USPTO)